OfficeServ 7000 [V4.30 S/W] Feature Guide

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References

1. OfficeServ 7000 [V4.30 S/W] Requirements Document, 2008.
2. OfficeServ 7000 [V4.30 S/W] Detailed Design Document, 2008.

1. Overview

1.1 Purpose

This document is to specify the requirements to be applied when testing the OfficeServ 7000 Families V4.30 S/W. Also, the details presented in the V4.30 S/W Requirements section contain the technical items necessary in the development stage of the V4.30 S/W and have been written from the standpoint of users. The system test units and test items for the V4.30 S/W shall be determined based on the requirements specified by OfficeServ 7000 [V4.30 S/W] Requirements Document.

This document is not for the real end-users but is made for installation and education of V4.30 S/W. So it should be used only inside company.

1.2 Scope and Compatibility Table

Application Scope and Compatibility Table of V4.30 S/W is as table 1.

Table 1. Version Compatibility Table

	OS7400	OS7200		OS7100			OS7030	OS7070
	MP40	MP20	MCP	MP10	MP10a	MP11		
MP	V4.30a	-	V4.30a	V4.30a	V4.30a	V4.30a	V4.30a	-
LP40	V1.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LCP	V4.16	-	V4.16	N/A	N/A	N/A	N/A	N/A
SVMi-20E	V5.12	-	V5.12	N/A	N/A	N/A	N/A	N/A
TEPRI2/a	V4.24	-	V4.24	V4.24	V4.24	V4.24	N/A	-
4BRI	V6.10	-	V6.10	N/A	N/A	N/A	N/A	N/A
MGI16/64	V1.24	V1.24	V1.24	V1.24	V1.24	V1.24	N/A	N/A
OAS	V1.00	V1.00	V1.00	N/A	N/A	N/A	N/A	N/A
IT	V1.30	V1.30	V1.30	V1.30	V1.30	V1.30	V1.30	-

Related S/W such as ITP Phone should be upgraded to use V4.30 S/W.

1.3 Restriction

V4.30 S/W can be used as following cases:

- Install System for the first time.
- Upgrade from V1.0x S/W of OfficeServ 7030/7070.
- Upgrade from V4.2x S/W of OfficeServ 7400/7200/7100.
- In case of upgrading from lower than V4.2x of OfficeServ 7400/7200/7100. You should upgrade S/W into V4.2x and verify its normal operation, then upgrade to V4.30 S/W again.
- The OSM and WebMMC for OfficeServ 7200/7400 can not connect to the V4.30 system.

2. V4.30 S/W Added/Modification Features

This section describes the detail features to be developed by the V4.30 S/W, which are classified into categories.

2.1 MOBEX (Mobile Extension) Feature

The following terms shall be defined to explain the Mobile Extension

- MOBEX Number: The phone number of an external device, such as a mobile phone, to be ringing.
- MOBEX Phone: An external phone that has a MOBEX number.
- MOBEX User: A user of a MOBEX phone.
- MOBEX Station: A virtual station to which a MOBEX number is assigned. Only the Executive MOBEX user can use supplementary services.
- Master Station of the MOBEX: A master station which is assigned to MOBEX station. This station is for certificating the use of the MOBEX supplementary services. When the MOBEX user assigns some special features, these features are assigned to this master station.
- Master Station of the Ring Group: A station that assigns the max 5 stations including MOBEX station as its Ring Group members. When user makes a call to Master Station, all the members (including MOBEX station) are ringing simultaneously.

2.1.1 MOBEX Station Setup

1) MOBEX Setup Procedure

The following procedure describes how to set the MOBEX station.

1. In **MENU 6.3.2 Virtual Card Change**, set MOBEX STN Card.
2. In **MENU 2.8.0 Numbering Plan,** input MOBEX station number to the specific channel whose card is assigned for <MOBEX STN>.
3. In **MENU 4.1.2 Trunk Groups,** assign <Group Type> to each group number and input the appropriate trunk number as a member of its trunk group.
4. In **MENU 2.7.5 Mobile Extension**, input the information to each MOBEX station numbers.
5. In **MENU 4.2.5 Ring Group Pair**, input the MOBEX station number as a member of Ring Group Master station
6. In **MENU 2.8.0 Numbering Plan,** input the MOBEX feature ID.

2) MOBEX STN Card Setup

- Select MENU 6.3.2 Virtual Card Change and set MOBEX STN card.
- MOBEX STN Card can be set by the maximum capacity which the system is allowed. In general some Cabinet-Slot is already assigned for MOBEX STN.
- Each System has some specific slots which MOBEX STN can be assigned to. In other words you can assign MOBEX STN to those specific slots in case MOBEX STN is included in Selectable card types.

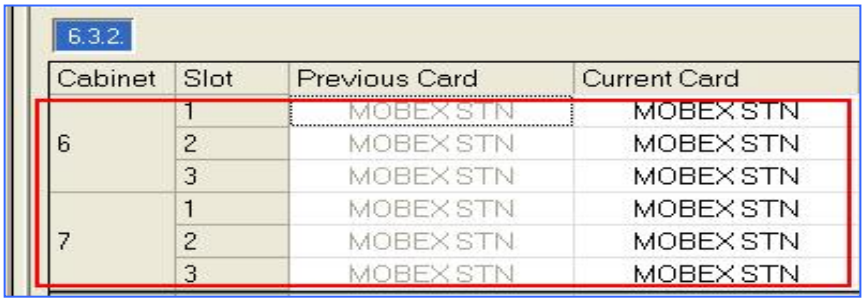


Figure 1. MENU 6.3.2. MOBEX STN Card Setup

3) MOBEX Station Number Setup

- Select MENU 2.8.0 Numbering Plan and set the MOBEX station number.

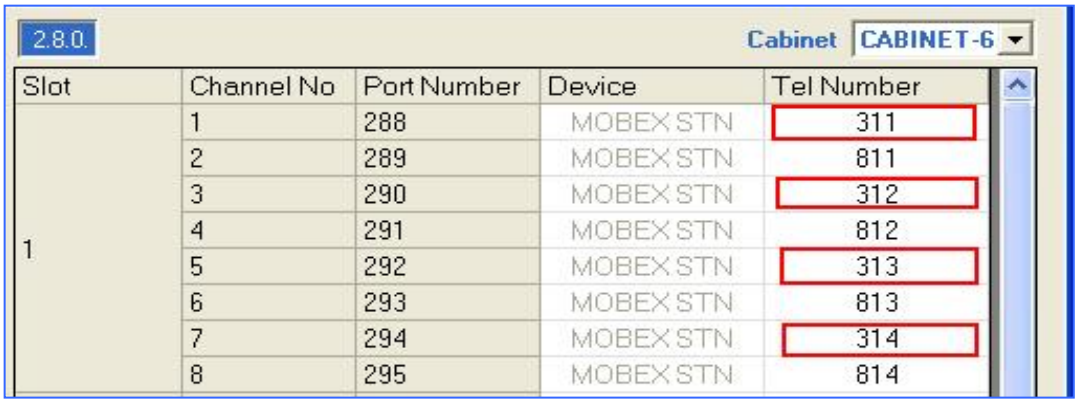
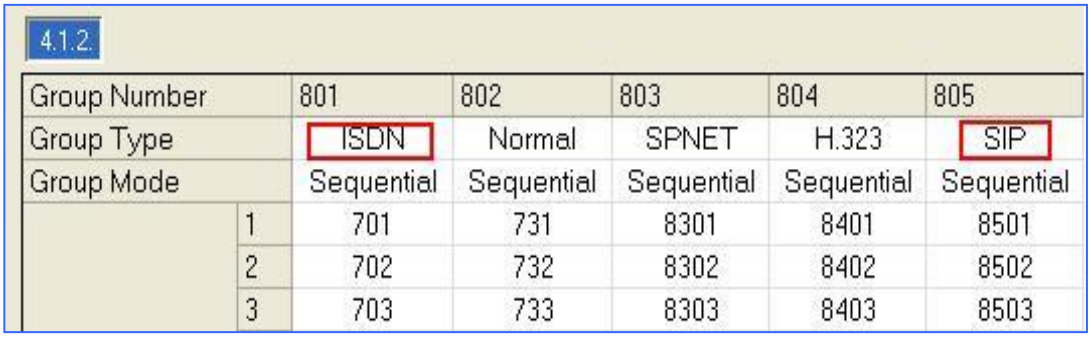


Figure 2. MENU 2.8.0. MOBEX Station Number Setup

- MOBEX station number makes a pair with its even channel. So it is recommended the users to input MOBEX station number as Figure 2.
- Odd channel (Number 311~314 of Figure 2):
  - It is virtual station for MOBEX feature.
  - Its operation is similar to that of Normal SLI port.
- Even channel(Number 811~814 of Figure 2):
  - It is virtual station for CTI solution.
  - When MOBEX call is operated, internal and external calls are generated. But CTI solution can't process these two kinds of call in a one port for a same time. In this case, even channel is used for controlling external call.
  - It is not necessary to input station number when CTI solution is not used. Because this even channel is only for an external call not an internal call.

4) Trunk Group Setup

- Select MENU 4.1.2 Trunk Groups.
- Assign Group Type to each Group number and input the trunk number as a member of its Trunk Group.
- Trunk members should accord with its Group Type.
  (ex. ISDN <=> PRI port 701, SIP <=> SIP trunk port 8501)
- The reason of setting Group Type is for restricting usable trunk type. Because both MOBEX feature and emergency call of Remote ITP use only specific trunk type.
  (ex. MOBEX ⇔ PRI/BRI trunk, Remote ITP ⇔ SIP trunk)



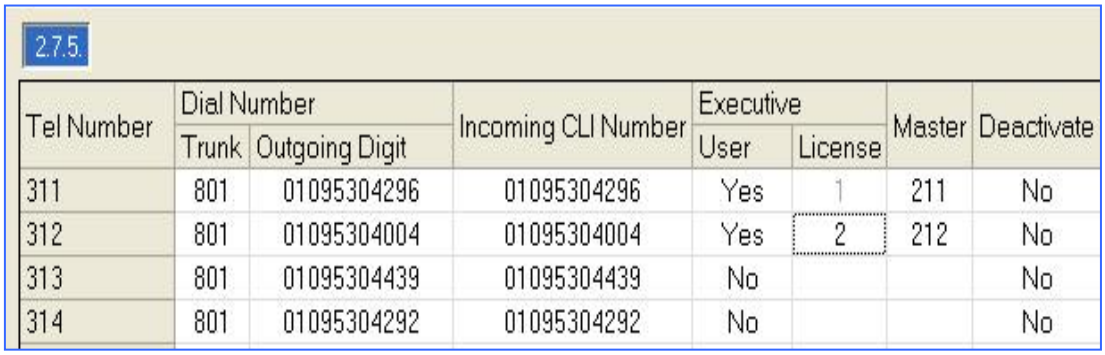
4.1.2.

Group Number		801	802	803	804	805
Group Type		ISDN	Normal	SPNET	H.323	SIP
Group Mode		Sequential	Sequential	Sequential	Sequential	Sequential
	1	701	731	8301	8401	8501
	2	702	732	8302	8402	8502
	3	703	733	8303	8403	8503

Figure 3. MENU 4.1.2. Trunk Group Type Setup

5) MOBEX Station Information Setup

- Select MENU 2.7.5 Mobile Extension and set the information to each MOBEX station number.



2.7.5.

Tel Number	Dial Number		Incoming CLI Number	Executive		Master	Deactivate
	Trunk	Outgoing Digit		User	License		
311	801	01095304296	01095304296	Yes	1	211	No
312	801	01095304004	01095304004	Yes	2	212	No
313	801	01095304439	01095304439	No			No
314	801	01095304292	01095304292	No			No

Figure 4. MENU 2.7.5. MOBEX Station Information Setup

- Input Dial Number as a speed dial format.(Trunk + Outgoing Digit)
  This number is for calling MOBEX phone.
  - Only PRI/BRI or SIP trunk group is allowed to be entered as Trunk. But in case of

entering SIP trunk group, MOBEX Executive services are not operated normally. Because V4.30 S/W is not yet supported DTMF detection in case of SIP trunk.

- LCR code using PRI/BRI or SIP trunk group also can be entered as Trunk. In actual outgoing call, LCR which doesn't use PRI/BRI or SIP trunk group is treated as Error.
- Users can input individual trunk numbers. But it is not recommended because those individual trunks have a high possibility to be busy. If you assign trunk group numbers as trunk and make an outgoing call, trunk group will automatically search the free trunk number in its members.
- Input MOBEX phone number to Outgoing Digit. (3~16 digits)

– Input CLI number of incoming call to CLI Number. This incoming call is received from MOBEX phone.
  - Generally MOBEX certification flow is needed when using MOBEX Executive Services. But users can dispense with such certification flow when CLI of incoming call is matched with pre-entered CLI Number.

– Select MOBEX station to use Executive Supplementary services.
  - Select whether MOBEX Executive services are used or not.
  - License Priority displays the number of MOBEX Executive License which is needed for MOBEX station to use supplementary services.

– Input Master Station of MOBEX to Master.
  - Master station is the standard number when using Supplementary services.
  - Users should be entered <Station Number + Password> for MOBEX certification. And this Station Number is called Master station.
  - To use Executive services, users should assign this Master station to Master station of Ring Group.

– Users can disable MOBEX station operation setting Deactivate to <YES>.
  - Setting <Yes> or <No> can decide whether MOBEX station is used or not.
  - Even if MOBEX station operation is disabled, License doesn't change.

6) Set MOBEX station as a member of Ring Group

– Select MENU 4.2.5 Ring Group Pair and assign MOBEX station to the Ring Group member of Master station.

– MOBEX station can be assigned to Ring Group of another station which is different from Master station of MENU 2.7.5. But to use MOBEX Executive services, users should assign MOBEX station to Master station of MENU 2.7.5.

– Users can assign one individual station to the Ring Group of many stations.

– When Master station of Ring Group is called, its members are also ringing. In this case if one individual member answers, calls of the other members are cleared.

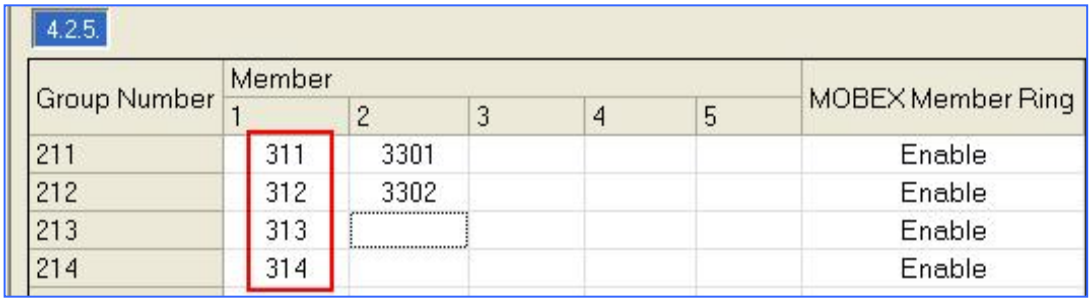


Figure 5. MENU 4.2.5. Ring Group Member Setup

7) Set Feature ID which is related to MOBEX feature.

- Select MENU 2.8.0 Numbering Plan and input Feature ID number which is related to MOBEX feature.
- FPICK is the feature ID for intercepting call of Ring Group members.
  In other words, it is for Forced Call Pickup.
- MOBEX is the feature ID for using MOBEX Executive Services. And it is also used when the user wants MOBEX station not to be ringing.

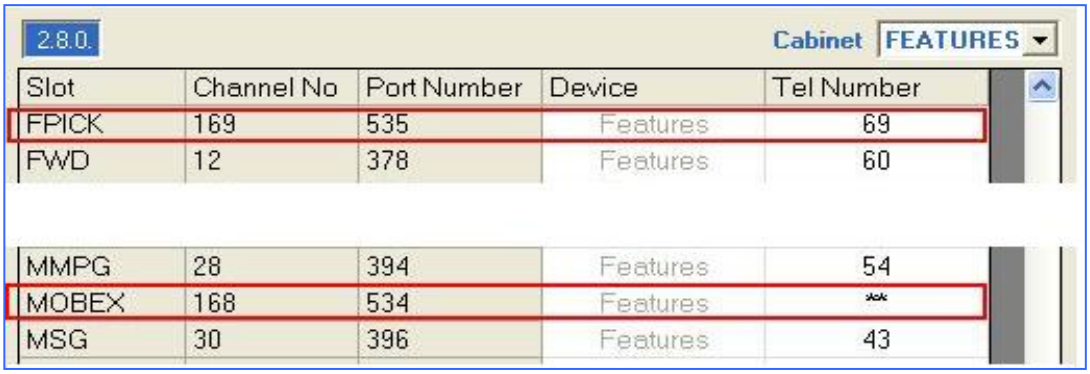


Figure 6. MENU 2.8.6. MOBEX Feature ID Setup

2.1.2 MOBEX Standard Feature

MOBEX Standard features are operated without License.

1) Calling to MOBEX Station

- MOBEX Station operation is similar to that of Normal SLI phone.
- MOBEX Station is called to dial MOBEX Station Number directly.
- MOBEX Station can be called by assigning it to the secondary of Station Pair.
  : In **MENU 4.2.1 Station Pair**, input MOBEX station to Secondary No.
- MOBEX Station can be called by assigning it to the member of Station Group.
  : In **MENU 4.1.1 Station Groups**, input MOBEX station to Member.
- MOBEX Station can be called by assigning it to the member of Ring Group.

: In **MENU 4.2.5 Ring Group Pair**, input MOBEX station to Member.

2) MOBEX Station Monitoring

- MOBEX Station can be called or monitored by assigning it to DS key.
  : In **MENU 4.9.2 Station Key**, assign "DS + MOBEX station" key.
- MOBEX Station can be called or monitored by assigning it to CC key.
  : In **MENU 4.9.2 Station Key**, assign "CC + MOBEX station" key.
- When SMDR is printed out, MOBEX station number is displayed.
- Users can monitor two numbers of MOBEX station pair in case of CTI solution.

3) CLI Transfer

- When transferring CLI to MOBEX phone, it is the principle to send the first caller's CLI.
- When MOBEX station receives a trunk call and is ringing, send CLI as following procedures.
  1. If incoming CLI is existed, send it as outgoing CLI.
  2. If there is no incoming CLI and incoming call is related to Call-Forward, DISA or Transfer, send CLI of station which is the destination of Call-Forward/Transfer/DISA as outgoing CLI.
  3. If there is no CLI to transfer, send CLI of incoming trunk or CO Tel Number as outgoing CLI.
- When the individual station calls MOBEX station, send CLI as following procedures.
  1. Send CLI of outgoing station.
  2. If there is no CLI of outgoing station, send the number of outgoing station.

- **<u>Attention</u>: Some of PSTN operators will not accept unconfirmed calling party number (CLI) that they didn't give to customer. In this case, the PSTN operator will be call reject, or will be modify CLI number that they had given to customer.**
- **For this issue, add some options as [Figure 7] and [Figure 8].**

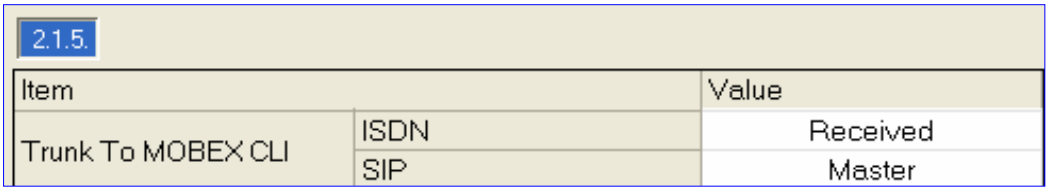
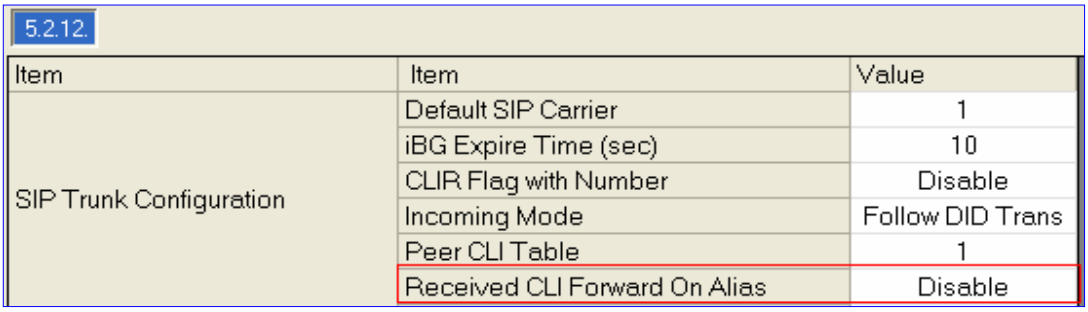


Figure 7. MENU 2.1.5. MOBEX CLI Number Option

- When MOBEX outgoing call, the CLI number can select.
  : In **MENU 2.1.5 Trunk To MOBEX CLI**, assign used CLI number for PRI/BRI trunk outgoing and SIP trunk outgoing.
  - Received: Send received CLI number from trunk.
  - Master: Send the Master station's CLI Number in MENU 2.4.3.
  - MOBEX: Send the MOBEX station's CLI Number in MENU 2.4.3.

- When MOBEX outgoing call via SIP trunk, the incoming CLI number can transfer to MOBEX station.
  : In **MENU 5.2.12 Received CLI Forward On Alias**, if this option set to enable, than the incoming CLI number attach to ALIAS field when SIP trunk outgoing.



5.2.12.

Item	Item	Value
SIP Trunk Configuration	Default SIP Carrier	1
	iBG Expire Time (sec)	10
	CLIR Flag with Number	Disable
	Incoming Mode	Follow DID Trans
	Peer CLI Table	1
	Received CLI Forward On Alias	Disable

Figure 8. MENU 5.2.12. Incoming CLI transfer to MOBEX via SIP trunk

2.1.3 MOBEX Convenient Feature

1) Stop Simultaneous Ring of MOBEX Station

- It is possible that only MOBEX station which is a member of Ring Group can not be ringing. But in this case MOBEX phone can be ringing by dialing MOBEX station number directly.
- Simultaneous Ring of MOBEX Station can be stopped by following methods.
  - MOBEX Feature ID (**) + ON (1): Activate
  - MOBEX Feature ID (**) + OFF(0): Deactivate
  - Users can activate or deactivate this feature conveniently by using MOBEX key. MOBEX key should be assigned to Master station.
- In MENU 4.2.5 Ring Group Pair, MOBEX Member Ring can be disabled. In this case only MOBEX station is not ringing. (MOBEX station should be a member of Master station.)
- MOBEX Executive Users can activate or deactivate this feature by making a call to the system.
- LED of MOBEX key displays whether MOBEX station is ringing or not.

2) Stop Use of MOBEX Phone

- In MENU 2.7.5 Mobile Extension, Deactivate field can be set to <YES>. In this case MOBEX station operation is disabled and MOBEX phone can't receive all the incoming calls.

3) Call Intercept (Forced Call Pickup)

- When the individual station is busy, a member station belonging to the same Ring Group or its master station can intercept that call.
- MOBEX call can be transferred to the normal official phone by using this feature. The

reverse case is also possible.

- When MOBEX station is busy, master station can intercept the call by dialing following codes. (Master station should have a MOBEX station as its Ring Group member.)
  - FPICK Feature ID (69) + Ring Group Master Station
  - FPICK Feature ID (69) + MOBEX Station in Busy
- Another member of Ring Group can intercept the call by dialing following codes.
  - FPICK Feature ID (69) + Ring Group Master Station
  - FPICK Feature ID (69) + MOBEX Station in Busy

4) Change MOBEX Phone Number

- In MMC 126, users can change MOBEX phone number and its CLI number. To use this MMC, MOBEX station should be registered as a member of the Ring Group Master station.
- Warning: If users assign a wrong number, MOBEX station could be operated abnormally. So be sure to register correct MOBEX phone number.

2.1.5 DTMF Detection of MOBEX Phone

1) MOBEX DTMF Receiver

- To use MOBEX Executive services, system needs extra receiver which can detect DTMF during call.
- Extra receiver is needed because existing DTMF receiver is only planned for the most suitable capacity to make an outgoing call or use DISA.

2) MP Embedded Receiver

- OfficeServ 7100/7070 system supports 8 channels of receiver without installing extra H/W.
- OfficeServ 7030 system supports 4 channels of receiver without installing extra H/W.
- 8 channels of receiver can make 8 MOBEX calls for a same time.

3) OAS Card Receiver

- OfficeServ 7200/7400 system needs an extra receiver card which is called OAS Card.
- OAS Card is operated as DTMF receiver with channel numbers such as 64, 32 or 16. It is recommended that OAS card should be installed in 64 channel-slot in case of OfficeServ 7400 and 32 channel-slot in case of OfficeServ 7200.
- There is no restriction how many OAS Card can be installed. But it is recommended that channels should be ensured as much as numbers of MOBEX Executive user.
- It is recommended that minimum channels should be ensured as much as numbers of PRI/BRI trunk.
- If MOBEX Executive user can't use supplementary services due to lack of DTMF receiver, no indication of such circumstance is provided.

4) Trunk Type Restriction for MOBEX Executive Service

- MOBEX Executive Services are not provided by SIP trunk because DTMF signal of MOBEX phone comes to the system mixing with voice signal.(inband)
- MOBEX Executive services are provided by only PRI/BRI trunk.

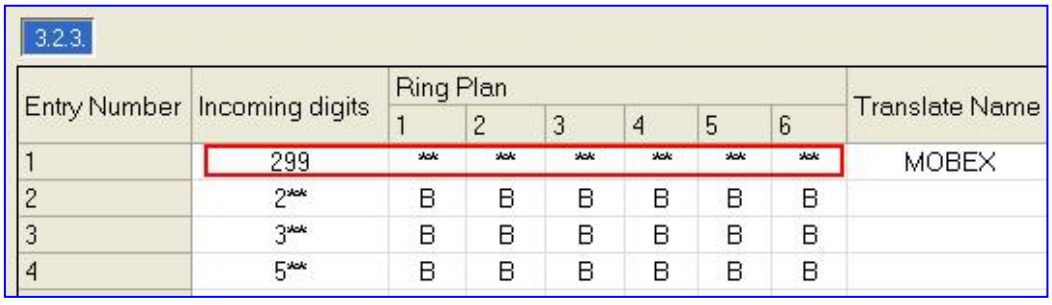
2.1.5 MOBEX Executive Feature

1) MOBEX Executive User Setup

- Select MENU 2.7.5 and set <Executive User> field to <Yes>.
- Even if MOBEX station is designated as a MOBEX Executive user, all the Executive users can't set supplementary services. Only the users who are not over the numbers of MOBEX Executive License can use supplementary services.
- Basically one MOBEX station is designated as a MOBEX Executive user without License.

2) MOBEX Feature during call

- MOBEX Executive User can be provided supplementary services such as Transfer, Hold, and Conference during call.
- If MOBEX user dials MOBEX Feature ID(**), the opposite party will be hold and the MOBEX user hear transfer tone. In this case MOBEX user can transfer the call to another station by dialing station number.
- If MOBEX user dials MOBEX Feature ID(**), MOBEX phone will have a same operation with Hook Flash of Normal SLI phone.
- MOBEX Features can be set by same methods which is similar to those of Normal SLI Phone.
- For example, Transfer can be set by dialing following codes during call.
  - MOBEX Feature ID(**) + Station + On Hook: Unscreened transfer
  - MOBEX Feature ID(**) + Station + Answer/Talking + On Hook: Screened transfer
  - MOBEX Feature ID(**) + Station + Answer/Talking + MOBEX Feature ID(**): Consultation transfer
  - MOBEX Feature ID(**) + Station + MOBEX Feature ID(**): Transfer Cancel
  - If user dials MOBEX Feature ID(**) and hangs up the phone while dialing station number, call on hold will not recall and just be cleared.



Entry Number	Incoming digits	Ring Plan 1	2	3	4	5	6	Translate Name
1	299	**	**	**	**	**	**	MOBEX
2	2**	B	B	B	B	B	B	
3	3**	B	B	B	B	B	B	
4	5**	B	B	B	B	B	B	

Figure 9. MENU 3.2.3. MOBEX Feature ID Setup to DDI Ringing.

3) MOBEX Feature ID Setup to DDI Ringing

- In MENU 3.2.3 DDI Ringing, input MOBEX Feature ID(**) to Ring Plan of specific Incoming digits. (ex. 299)

4) MOBEX Incoming Certification

- When the DDI call is incoming and its DDI destination number is same with MOBEX Feature ID, that call is recognized as MOBEX incoming call and MOBEX Certification Flow will be operated. (Refer to Figure 9)
- MOBEX Incoming Certification is operated by inserting “Station + Password”.
- Station is Master station of the MOBEX station. In this case set MOBEX station as a member of the Ring Group Master station.
- Password can be set in Key MMC 101. Like DISA password, default password (1234) can’t be used in MOBEX Incoming Certification.

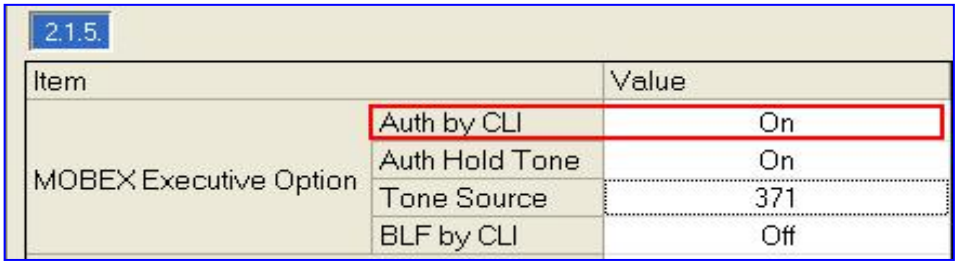


Figure 10. MENU 2.1.5. MOBEX Automatic Certification Setup

5) Automatic Certification by CLI

- In MENU 2.1.5 System Options, set <Auth by CLI> to On. In this case MOBEX Incoming call is automatically certified without inserting “Station + Password”.
- When Auth by CLI is set to On and DDI call whose destination is same with MOBEX Feature ID(**) is incoming, that call is automatically certified by Master station of the MOBEX station. In this case incoming CLI should be matched with CLI Number of MENU 2.7.5. Otherwise the incoming call is failed to certify MOBEX Incoming.

6) MOBEX Incoming Certification Flow

- MOBEX Incoming Certification Flow is as follows:
  1. When DDI call whose destination is MOBEX Feature ID (**) is incoming, user can hear dial tone for the next certification flow.
  2. Dial Master of MOBEX station number. Then confirm tone is heard.
  3. Dial Password of Master station. Then dial tone is heard. Certification is completed.
  4. When Auth by CLI is set to On, Step 2.3 is omitted and dial tone is heard.
  5. After completing certification, user can make a call to other station/trunk or set the supplementary services on its Master station.

- In MENU 2.1.5, set Auth Hold Tone to ON. In this case, dial tone of step 1 is alternated by Tone Source of MENU 2.1.5. Hold Tone or MOH can be selected as Tone Source.
- After completing certification, user can hear dial tone. This state is same with that of Normal SLI phone states off hook.
- After completing certification, MOBEX user can set supplementary services on its Master station or make a call of internal or external.

7) MOBEX Station Monitoring

- State of MOBEX station can be monitored by using DS+MOBEX key. In this case only the call which is generated by MOBEX feature is possible to be monitored.
- In MENU 2.1.5, set BLF by CLI to On. In this case, BLF service is provided to Normal DDI incoming call.
  - ◆ When DDI call whose destination is MOBEX Feature ID(**) is incoming:
    BLF Service is only provided to certified MOBEX station.
    DS/CC key and CTI solution is possible to use.
  - ◆ When DDI call whose destination is not MOBEX Feature ID(**) is incoming:
    That call is incoming as normal DDI call and BLF Service is only provided to DS Key of MOBEX station whose CLI is same with DDI call.
    CC key and CTI solution is not service.
    Direct pickup by DS key is not operated.

2.1.6 Detailed Service Features of MOBEX

Following [TABLE 1] describes the detailed service features of MOBEX and how to use these features. Some features are allowed to use to both Standard and Executive users but most of features are only provided to Executive users.

TABLE 2. Detailed MOBEX Features

NO	FEATURE	STD / EXE	Procedures
1	Call Forward Follow-Me	EXE	▪After finishing MOBEX certification input the following codes to set Follow-Me FWD on Master station. **=> Call Forward Feature ID<60>+Follow-Me<6>+ station<A>** ▪Incoming call to station A will be forwarded to Master station.
2	Call Forward on Busy or No answer	STD	▪After finishing MOBEX certification input the following codes to set Busy or No answer FWD on Master station. **=> Call Forward Feature ID <60>+Forward type <2(Busy)/3(NoAns)/4(B&NoAns)>+station<A>**
3	Call Forward on DND	STD	▪After finishing MOBEX certification input the following codes to set DND FWD on Master station. **=> Call Forward Feature ID<60>+DND <5>+ station <A>**
4	Call Forward Unconditional	STD	▪After finishing MOBEX certification input the following codes to set Unconditional FWD on Master station. **=> Call Forward Feature ID<60>+All <1>+ station <A>**
5	Call Intercept of	STD	▪When MOBEX user is busy, one of members of Ring Group can

	MOBEX call by FPICK key		intercept the MOBEX call by dialing **<FPICK Feature ID + Master station of Ring Group>.** Or in the same circumstances, Master station of Ring Group also can intercept the MOBEX call by dialing **<FPICK Feature ID + MOBEX station>.**
6	Call pickup of MOBEX ringing	STD	▪When the MOBEX user receives a call from station A and the MOBEX phone is ringing, input **DIRPK Feature ID <65>+ MOBEX station.**
7	Class of Service	STD	▪Select **MENU 4.7.2 COS Contents** and set COS of Master station. ▪When the call is outgoing to MOBEX station or is incoming to System from MOBEX Executive user, that call is operated by following COS of Master station.
8	Direct Station Select	STD	▪Select **MENU 4.9.2 Station Key** and make <DS + MOBEX station> button.
9	Do not Disturb and Override	STD	▪Select **MENU 4.7.2 COS Contents** and set <DND OVRD> of chosen COS to <YES>. ▪After finishing MOBEX certification, make a call to station A which is set to DND. ▪When hearing DND Busy tone, input **<DND OVRD Feature ID>.**
10	Forced Trunk Release	STD	▪Select **MENU 6.3.5 Port Clear** and set <Clear> of MOBEX station to <YES>.
11	In/Out of Group	STD	▪Select **MENU 4.1.1** and register Master station of MOBEX as a member of station group A. ▪After finishing MOBEX certification input the following codes. **=> IG Feature ID<53>+Station Group<A>+IN<1>** **IG Feature ID<53>+Station Group<A>+OUT<0>**
12	Make calls via LCR	STD	▪Select **MENU 3.1.1 LCR Options** and set <LCR Enable> to <On>. ▪Select **MENU 3.1.2 Routing Digits** and input the information to <LCR Digit>, <Length> and <Routing Table>. (ex. LCR Digit : 27, Length : 2, Routing Table : 1) ▪Select **MENU 3.1.4 Routing Table** and input trunk group number to the specific Zone. This zone should be same with <Routing Table> of MENU 3.1.2 (ex. Group : 801) => You should select PRI/BRI or SIP trunk group to make a normal MOBEX station call. (ex. ISDN trunk group : 801, SIP trunk group : 805) ▪Select <FEATURES> of **MENU 2.8.0** and input LCR Feature ID (ex. LCR : 69) ▪Select <N-LCR> of **MENU 2.8.0** and input N-LCR number (ex. N-LCR : 27) ▪Select **MENU 3.3.2 Network Dial Translation** and input <Translation Digits> of specific N-LCR. This N-LCR number is designated in MENU 2.8.0. Input <Wait Length> and <Max Digit>. Wait Length is the minimum digits to be recognized with N-LCR and Max Digit is for linking with the opposite station by LCR. (ex. Translation digits: 272, WaMENU Length : 2, Max DigMENU : 3). ▪Input LCR feature ID to <Trunk No> of **MENU 2.7.5.** Input opposite station number to <Outgoing Digit> for linking by LCR. (ex. Trunk No : 69, Outgoing Digit : 272) => If user does not assign ISDN/SIP trunk to **MENU 3.1.4** and calls MOBEX station, error message such as <Not Available>will be displayed.
13	Make calls via OS	STD	▪OS Operator or call dials Master station of Ring group number of

	Operator/Call		MOBEX station number.
14	Monitoring on DS or CC key	STD	▪Select MENU 4.9.2 Station key, make a DS+MOBEX or CC+MOBEX key. ▪When MOBEX station is busy, the DS or CC key LED On.
15	Monitoring via OS Operator/Call	STD	▪In OS Operator or Call's key, make a STN+MOBEX. ▪When MOBEX station is busy, the STN key LED On.
16	Originators CLI Transfer	STD	▪When external user A makes a trunk call to MOBEX station, (1) If incoming CLI is existed, send it as outgoing CLI. (2) If there is no incoming CLI, send CLI of Master station. => In **MENU 2.4.3 CLI Send Number**, CLI of master station should be registered to<Send CLI Number>. (3) If there is no CLI master station, send master station Tel number.
17	Preset Forward No Answer	STD	▪Select **MENU 2.5.4 Preset Forward,** and input station A to <Forward Port> of MOBEX station. ▪When MOBEX station is busy or has no answer, incoming call of MOBEX station is forwarded to station A.
18	Station Group Membership	STD	▪Select **MENU 4.1.1 Station Groups** and input ring group master station of MOBEX station to <Member> of station group A.
19	Ring Group	STD	▪Select **MENU 4.2.5 Ring Group Pair**, and input the max 5 stations (including MOBEX station) to <Member> of Ring Group Master station.
20	Station pairing	STD	▪Select **MENU 4.2.1 Station Pair,** and input ring group master station of MOBEX station to <Primary No> of station A.
21	Station Programmed message	STD	Leave Station Message ▪After finishing MOBEX certification, make a call to station A. ▪When station A is busy or has no answer, MOBEX user dials **MSG Feature ID <43>** to leave station message. In this case, the station has station message from the master station of MOBEX station.
22	Voice Mail Indication	EXE	
23	Account codes voluntary	EXE	▪Select **MENU 4.5.2 Account Code,** and input Account codes to the individual entry. ▪ After finishing MOBEX certification input the following codes. **=> ACCT Feature ID<47>+<Entry Number>** ▪Make an outgoing trunk call when hearing confirm tone.
24	Conference	EXE	▪MOBEX user dials **<MOBEX Feature ID>** while talking with station A. ▪Dial **CONF Feature ID <46>** and then make an outgoing call to station B. ▪Dial **<MOBEX Feature ID>+<CONF Feature ID>** to make a conference while talking with station B.
25	Holding Calls	EXE	▪MOBEX user dials **<MOBEX Feature ID>+ HOLD Feature ID <11>** while talking with station A.
26	Transfer	EXE	▪MOBEX user dials **<MOBEX Feature ID>** while talking with station A.
27	Transfer with Camp-On or Remote Hold	EXE	▪MOBEX user dials **<MOBEX Feature ID>+ station <B> in Busy state** while talking with station A. ▪Dial **CAMP Feature ID <45>** when hearing busy tone. Then Camp-on is applied to station B.
28	Transfer with Consultation	EXE	▪MOBEX user dials **<MOBEX Feature ID>** while talking with station A. ▪Make an outgoing call to station B. When station B answers the phone, station A is on hold. ▪When MOBEX user dials **<MOBEX Feature ID>** again station A is on the phone and station B is on hold. => Whenever MOBEX user dials MOBEX Feature ID, station A and B are transferred by turns.
29	Activate/Deactivate	EXE	▪Select **MENU 2.7.5,** and set <Status> of MOBEX station to Deactivate.

	MOBEX station		
30	Set Call forward	EXE	▪After finishing MOBEX certification input the following codes to set FWD on Master station. **=> Call Forward Feature ID <60>+<FWD Type Feature ID>+FWD destination <A>** (FWD Type Feature ID :: All (1), Busy (2), NoAns (3), Busy/NoAns (4), DND (5))
31	Set Call Forward Follow-Me	EXE	▪After finishing MOBEX certification input the following codes to set FWD on Master station. **=> Call Forward Feature ID <60>+Follow-Me <6>+Station <A>**
32	Set Do Not Disturb	EXE	▪After finishing MOBEX certification input the following codes to set DND on Master station. **=> DND Feature ID<40>+ On<1> : activate DND** **DND Feature ID<40>+ Off<0> : deactivate DND**
33	Link/Unlink Ring Group	EXE	▪Dial **<MOBEX ID + 0(Off)>** on Master station. When call is incoming to Master station, MOBEX station which is one of the member of Ring Group is not ringing. ▪Dial **<MOBEX ID + 1(On)>** on Master station. In this case simultaneous Ring of MOBEX station will be supported again. ▪When made a **<MOBEX>** key on Master station of ring group, press MOBEX key then toggle ringing or not ringing to MOBEX.
34	Set Station Programmed message	EXE	▪Select **MENU 4.7.2 COS Contents** and set <PGM MSG> of individual COS to YES. ▪After finishing MOBEX certification input the following codes to set Station Programmed message on Master station. **=> PMSG Feature ID <48>+PSMG Number <01~20>** ▪If you want to clear designated PMSG, input the following codes **=> PMSG Feature ID <48>+<00>** ▪PGM MSG is displayed on the LCD when another station makes an outgoing call to Master station.
35	Station Message Cancel or Set on Idle	EXE	▪After finishing MOBEX certification, input **CANMG (=cancel msg) Feature ID <42>+ station <A>** then cancelled station A left message from master station of MOBEX.
36	Voice Mail Access	EXE	▪Station A calls VM and can leave VM message to master station of MOBEX station. ▪After finishing MOBEX certification, dials to VM then the MOBEX user access to master station's mailbox.
37	Account codes	EXE	▪After finishing MOBEX certification input the following codes. **=> ACCT Feature ID<47>+<Account Code>+ACCT Confirm digit <*(star key)>**
38	Authorization codes	EXE	▪After finishing MOBEX certification input the following codes. **=> <AUTH Feature ID>+<Auth Code>**
39	Barge-In on Busy	EXE	▪Select **MENU 5.13.1 Tenant Options** and set <Barge In Type> to <With Tone> or <Without Tone>. ▪Select **MENU 4.7.2 COS Contents.** Set <OVERRIDE> to YES and <SECURE> to NO. ▪After finishing MOBEX certification, call station A which is in busy. Then input **<Barge Feature ID>** while hearing busy tone.
40	Call Paging to Internal or External	EXE	▪Select **MENU 4.1.3 Page Groups** and input Member to Internal Zone(0~4) or External Zone(5~8) ▪After finishing MOBEX certification input the following codes. **=> PAGE Feature ID <55>+Zone No.<0~8>**
41	Call Pickup Ringing	EXE	▪Select MENU 2.5.1 and set <Pickup Group>.

	calls		▪After finishing MOBEX certification input the following codes while station A is ringing. => **DIRPK Feature ID <65>+ Station <A>** Or **GRPK Feature ID <66>+ Pickup Group No. of Station <A>**
42	Camp-on Busy	EXE	▪After finishing MOBEX certification call station A which is in busy. ▪When hearing busy tone input **CAMP Feature ID <45>**.
43	Distinctive Ring on Intercom call	EXE	▪Select **MENU 2.4.2 Port Common Data** and set <Distinct DGP Tone> and <Distinct SLT Ring> on each station.
44	Intercom call	EXE	▪Select **MENU 5.6.3 SMDR Options** and set <Intercom Call> to YES. ▪Select **MENU 2.5.3 Customer On/Off** and set <Intercom SMDR> to On. ▪Call log between station A and B is printed out on SMDR.
45	Make Outside Calls	EXE	▪After finishing MOBEX certification, make an outgoing trunk call.
46	Make call by Speed Dial	EXE	▪Select **MENU 5.15.7 Station Speed Dial** and set Speed dial of Master station. ▪After finishing MOBEX certification input the following codes. **=> Speed Feature ID <16>+ Speed dial No. of Master station.**
47	Meet Me Page and Answer	EXE	▪Select **MENU 4.1.3 Page Groups** and input Member to Internal Zone(0~4) or External Zone(5~8). ▪After finishing MOBEX certification, dial **MMPG Feature ID <54>+ Zone No.(0~8)**
48	Retrieve Calls on Hold or Parked	EXE	▪MOBEX user dials **<MOBEX Feature ID>** to retrieve call on Hold or Parked.
49	Station Call Back on Busy or No Answer	EXE	▪When station A call to MOBEX station and hears busy tone or ring back tone, press CBK button then Callback set to the MOBEX station. ▪When the MOBEX stat ion goes to idle state, the station A receive callback ringing for MOBEX station.
50	Station Message Reply	EXE	▪After finishing MOBEX certification input **MSG Feature ID <43>** while hearing message wait tone. => In this case MOBEX station makes an outgoing call to the station which is left station message on it.
51	Station Message Set on Busy/Ringback	EXE	▪After finishing MOBEX certification call station A. ▪When station A is busy or has no answer, MOBEX user dials **MSG Feature ID <43>.**
52	Toll Restriction	EXE	▪Select **MENU 4.8.5 Trunk Toll Type** and set Toll Class of trunk A. ▪After finishing MOBEX certification, make an outgoing call with trunk A. In this case the call is restricted or allowed by Toll Class of trunk A
53	Universal Answer	EXE	▪Select **MENU 5.13.1Tenant Options** and input station A to <Universal Answer Device>. => Call of station A will be picked up by MOBEX user. ▪After finishing MOBEX certification input **UA Feature ID <67>**. ▪When station A is ringing, MOBEX user can pick up the call of station A.

2.2 Advanced Media Control: No MGI Feature

2.2.1 No MGI

1) No MGI Overview

- MGI is no more used for a call between IP devices.
- It is the principle of V4.30 S/W that calls between IP devices use no MGI.
- MGI can be alternated by MPS in case of VoIP trunk or NAT circumstances which need

a device to deliver RTP data.

- ◆ MGI: RTP -> PCM -> (Time Switch) -> PCM -> RTP
  There are 2 PCM conversions in this process. Voice quality is worse due to these 2 conversions and it is wasteful to use 2 MGI channels.
- ◆ MPS: RTP -> (NAT Translation) -> RTP
  There is no PCM conversion in this process. So voice quality has no deterioration and only 1 MPS call is used.

- If the remote ITP is video phone, video calls as well as voice calls are possible to use MPS (Media Proxy Server).

Table 3. MGI/MPS Use by Different Call Types

		PCM Device		Local IP Device					Remote	Same Network Trunk			Others Network Trunk		
		STN	TRK	ITP	WIP	SIP	UMS	IVR	SIP	SIP	H.323	SPNet	SIP	H.323	SPNet
PCM Device	STN	No	No	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI
	TRK	No	No	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI
Local IP Device	ITP	MGI	MGI	No	No	No	MGI	MGI	MPS	MPS	MGI	MPS	MPS	MGI	MPS
	WIP	MGI	MGI	No	No	No	MGI	MGI	MPS	MPS	MGI	MPS	MPS	MGI	MPS
	SIP	MGI	MGI	No	No	No	MGI	MGI	MPS	MPS	MGI	MPS	MPS	MGI	MPS
	UMS	MGI	MGI	MGI	MGI	MGI	N/A	N/A	MGI	MGI	MGI	MGI	MGI	MGI	MGI
	IVR	MGI	MGI	MGI	MGI	MGI	N/A	N/A	MGI	MGI	MGI	MGI	MGI	MGI	MGI
Remote	WIP	MGI	MGI	MPS	MPS	MPS	MGI	MGI	MPS	MPS	MGI	MPS	MPS	MGI	MPS
Same Network Trunk	SIP	MGI	MGI	MPS	MPS	MPS	MGI	MGI	MPS	MPS	MGI	MPS	MPS	MGI	MPS
	H.323	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI
	SPNet	MGI	MGI	MPS	MPS	MPS	MGI	MGI	MPS	MPS	MGI	MPS	MPS	MGI	MPS
Others Network Trunk	SIP	MGI	MGI	MPS	MPS	MPS	MGI	MGI	MPS	MPS	MGI	MPS	MPS	MGI	MPS
	H.323	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI	MGI
	SPNet	MGI	MGI	MPS	MPS	MPS	MGI	MGI	MPS	MPS	MGI	MPS	MPS	MGI	MPS

2) No MGI Mode

- MPS is used for the following two kinds of call instead of MGI.
  - ◆ Calls between Local ITP and Remote ITP
  - ◆ Calls between IP station and IP trunk
- But calls of IP-UMS and IP-IVR should use MGI.
- No MGI Mode has 3 kinds of mode such as No MGI, MPS and MGI mode. Detailed things are described as follows:
  - ◆ No MGI mode: This mode is for calls between IP stations in same IP network.
    Ex) Local ITP – Local ITP, Public ITP – Public ITP
  - ◆ MPS mode: This mode is for calls between IP trunks or ITP devices in NAT circumstance.
    Ex) Local ITP – Remote ITP, Local ITP – SIP/SPNet

- MGI mode: This mode is for calls between PCM station/trunk and IP station/trunk.
  Ex) DGP – ITP, DGP – SIP/SPNet, PRI – ITP, PRI – SIP/SPNet

3) Difference between No MGI Mode and MPS Mode

- Calls between IP stations have 2 kinds of mode such as No MGI and MPS Mode. These modes are distinguished by environment in which NAT is used or not.
  - If system has an environment in which NAT is used,
    - Local ITP/WIP/SIP - Local ITP/WIP/SIP : No MGI
    - Local ITP/WIP/SIP - Public ITP/WIP/SIP : MPS
    - Local ITP/WIP/SIP - Public/firewall ITP/WIP : MPS
    - Public ITP/WIP/SIP - Public ITP/WIP/SIP : No MGI
    - Public ITP/WIP/SIP - Public/firewall ITP/WIP : MPS
    - Public/firewall ITP/WIP - Public/firewall ITP/WIP : MPS
    - Public/firewall ITP - Public/firewall ITP (same network) : No MGI
  - If system has no environment in which NAT is used,
    - Local ITP/WIP/SIP - Public/firewall ITP/WIP : MPS
    - Public/firewall ITP/WIP - Public/firewall ITP/WIP : MPS
    - Public/firewall ITP - Public/firewall ITP (same network) : No MGI

- Calls between IP station and IP trunk always use MPS.
  - If system has an environment in which NAT is used,
    - Local ITP/WIP/SIP - SIP/SPNet : MPS
    - Public ITP/WIP/SIP - SIP/SPNet : MPS
    - Public/firewall ITP/WIP - SIP/SPNet : MPS
  - If system has no environment in which NAT is used,
    - Local ITP/WIP/SIP - SIP/SPNet : MPS
    - Public/firewall ITP/WIP - SIP/SPNet : MPS

- Exception
  - H.323 Trunk always uses MGI.
  - SIP station of Public/firewall Mode is not supported. In other words SIP station is operated by Public Mode.
  - WiFi station of Public/Firewall Mode always uses MPS.
  - ITP of Public/Firewall Mode is operated by No MGI Mode refer to MGI/MPS option of MMC861 when it is in the same NAT circumstance.

2.2.2 MPS (Media Proxy Service)

1) MPS Overview

- MPS redirects the RTP data for the call between IP Phone of Private IP Network and that of Public IP Network.
- Even if IP station and IP trunk are in the same IP network, it is recommended that the

call between them should use MPS. If MPS is not used in this case, call flow will be changed frequently when using Transfer or Hold features and due to this problem the risk of cutting call flow will rise highly.

- Describe MGI/MPS use by different call types to [TABLE 2].

2) MPS Capacity

- OfficeServ 7100/7070/7030 provides MPS modules as an embedded-MP type and serves the max 8 calls.
- OfficeServ 7200/7400 serves MGI when MPS should be used.

3) Restriction of MPS Use

- If using MPS, DTMF detection which MGI supported can not be used any more.
- Only OfficeServ IP Phone can be provided Outband or Inband(RFC2833) services.
  - Outband: Method to transfer DTMF signal to Signaling message.
  - RFC2833: SIP Standard protocol which includes DTMF signal into header of RTP packet.
- IP Phone needs S/W upgrade for using MPS service. Kinds of IP Phone which should be upgraded are as follows:
  - OfficeServ SoftPhone (Version:)
  - SMT-W5100 (Version:)
  - ITP-5100V (Version:)
  - ITP-51xxD (Version:)

4) MPS Setup

- Select MENU 2.1.5 System Options and set MPS Service to On.
- MPS Service: Use MPS in case of On, use MGI in case of Off.
- No MPS->MGI: When MPS channel is not enough and <No MPS->MGI> is set to On, MGI is used for continuing current call. If <No MPS->MGI> is set to Off and system is short of MPS channel, current call will be cleared.
- DTMF: This option assigns how to send DTMF signal regardless of MPS/MGI use. There are 3 ways to send DTMF signal, Outband, Inband(RFC2833) and Inband(In Voice).

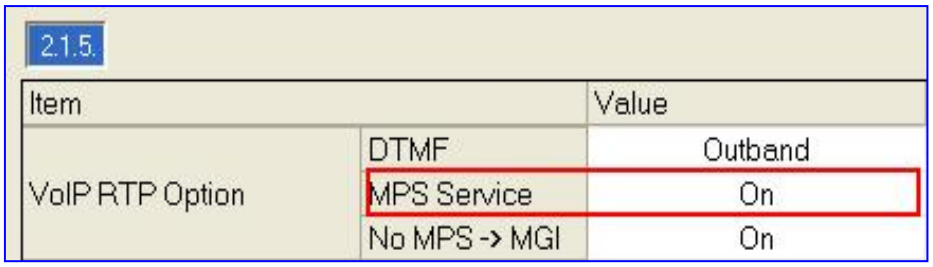


Figure 11. MENU 2.1.5. MPS Service Setup

- In case of using MGI card, it is recommended that DTMF type of MGI3 should be used.

5) MPS SPNet Setup

- In **MENU 3.3.1 System Link ID**, set <No MGI>.
  : This option indicates that MPS will be used or not when linking with opposite system through SPNet.

- In **MENU 3.3.3 Extra System Link ID**, set <No MGI>.
  : This option indicates that MPS will be used or not when linking with opposite system through SPNet.

2.3 Advanced License Control

- V4.30 S/W provides two kinds of License Service.
- License Server (OSCL) does not support old and new license type at the same time. So if new License Server (OSCL) is released, system should be operated by only new license type.
- Old license also can be increased by new license type. So user should upgrade the system for V4.30 S/W to use new license which is issued by new license server.

3.3.1 Old License

- Select MENU 2.1.4 and input PBX (OLD) license key. System is operated by old license.
- If PBX (OLD) license key is entered, table of new license key will be disabled.
- MOBEX Executive: PBX (OLD) license key can't assign MOBEX Executive license. But before releasing new OSCL server, MOBEX Executive license will be issued by old OSCL server temporarily.
- Select MENU 2.1.4 and input DSP (OLD) license key. System is operated by old license.

3.3.2 New License

- The license key system of V4.30 S/W is changed to increase the license by one user. But new license key system has 7 free values and 5 fixed values as same as old license key system.
- The new license key divides the old license key into 2 categories such as SIP Stack and Service key. Finally the new license key has total 3 categories, SIP Stack, Service and Resource. (Refer to Figure 12)
- SIP Stack License Key
  - SIP Trunk
  - Samsung SIP Phone

- 3rd-Party SIP Phone

- Service License Key
  - Soft Phone
  - H.323 Trunk
  - MOBEX Executive
- DSP License Key
  - MGI Channel: MP embedded(OS7100,7070,7030)
  - VM Channel
  - AA Channel: OS7070 only

2.1.4.

Item			Value
Temporary	License Type		Disable
Resource	License Key		NTOXNBML-W3MZTTNJ-JNRJLD9O-MU9BUSEX-OJJ5RU97-7Z5XALMQ
	License Status		OK
	MGI	Allowed	8
	VMS		4
SIP Stack	License Key		NINNJ2H8-IJJ02Y0X-3YULJCOE-GS382WAD-WJXOJM7U-USECHYMQ
	License Status		OK
	SIP Trunk	Max Count	10
	SIP Phone	Max Count	20
		Connected	0
	3rd SIP Phone	Max Count	30
		Connected	0
Service	License Key		
	License Status		No Licence Key
	H.323	Allowed	0
	Soft Phone	Max Count	0
		Connected	0
	Mobex Executive	Max Count	0

Figure 12. MENU 2.1.4. License Key Setup

2.3.3 Temporary License

1) Urgent License

- If MP card is changed inevitably and Urgent License is assigned in this case, even if there is no new license, system can provide the related services by inserting the existing license.
- In MENU 2.1.4, set <Temporary License Type> to <Urgent>. If a license key with an old MAC address is entered, even if the MAC address differs from that of new MP card, the old license can be used for two weeks.
- If a normal license key is entered while an urgent license is being operated, the existing license will be disabled automatically and the system will be operated by new license key.
- It can be used only one time on the same H/W.
- Two weeks, the usable time of urgent license, indicates the actual operation time.

2) Tutorial License

- Temporary license key for system demo.
- In MENU 2.1.4, set <Temporary License Type> to <Tutorial>. Even if normal license key is not entered, system can be operated by minimum license.
- It is operated normally when there is no normal license key. If a normal license key is entered while a tutorial license is being operated, it will be disabled automatically and the system will be operated by new license key.
- It can be used for two weeks after being enabled.
- It can be used only one time on the same H/W.
- Two weeks, the usable time of tutorial license, indicates the actual operation time.
- When the tutorial license is enabled, the available resources are as follows:
  - 2 VM channels
  - 2 MGI channels
  - 2 MOBEX Executive users
  - 2 Soft phones
  - 2 H.323 trunks
  - 2 SIP trunks
  - 2 Samsung SIP phones
  - 2 3rd-Party SIP phones
  - 2 Samsung SIP applications

2.4 The Other Features

2.4.1 SVM Options

1) SVMi Ring Mode

- In **MENU 2.1.6 SVMi Options,** user can assign SVMi Ring Mode like MP Ring Plan. 1 to 6 can be set to MP Ring Plan and 1 to 99 can be set to SVMi Ring Mode.

2) Holiday Assignment

- In **MENU 4.3.2 Holiday List**, user can assign MP Ring Plan and SVMi Ring Mode for each holiday.
- 1 to 6 can be set to MP Ring Plan and 1 to 99 can be set to SVMi Ring Mode.

3) SVMi Download Options

- In **MENU 2.1.6 SVMi Options**, set <Mailbox Download> to Yes. User can download the phone number of each device type when SVMi restart. In this case mailboxes of each device type are generated.
- If <STATION NAME> is set to Yes, user can download the station name when downloading station number. If MBX or EXT name of SVMi is changed, this change will be applied to the station name.

4) SVMi User Options

- In **MENU 5.9.1 SVMi Create Subscriber,** set the SVMi automatic generation option for each station.
  - None: There are no options to generate automatically.
  - Ext: Generate station numbers automatically.
  - MBX: Generate User mailboxes automatically.
  - Both: Generate both station numbers and user mailboxes automatically.

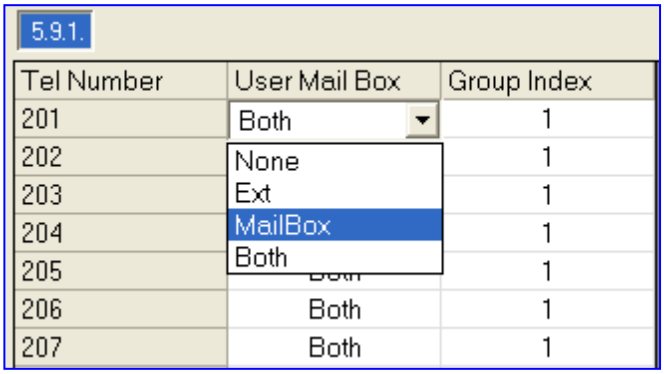


Figure 13. MENU 5.9.1. SVMi Automatic Generation Option Setup

2.4.2 ITP Idle Mode Feature

- S/W of ITP phone will be upgraded to use ITP idle mode.
- Only ITP-51xxD and ITP-5100V can be supported.

1) ITP Idle Mode

- If an ITP phone logs out in the state that it is registered on the system, it will go to login standby state and no call service will be performed.
- If an ITP phone logs in, it will be registered on the system and will be able to receive the call service from the system. When logging in, insert User ID and Password.
- If an ITP Phone logs in and there is a phone which has a same User ID, a phone which logged in by existing User ID will log out and the new phone will be able to log in.

2) ITP Logout Feature ID

- In MENU 2.8.0, input LOGOUT Feature ID. (ex, 68)
- When ITP phone is registered in the system, dial the LOGOUT feature ID(68). Then the system registration is deactivated and the ITP phone has an idle mode.

3) ITP Idle Mode Setup

- ITP phone can select the option to decide whether it is in the login standby state or logs in the system automatically when it restarts.

2.4.3 SIP-FXO link with Remote ITP

1) Definition of SIP-FXO

- It is an external SIP-PSTN gateway device which is installed in STA for providing an emergency phone number to Remote ITP.
- Resource: SIP 1 channel, FXO 1 port
- Interface: Link with PSTN through FXO. Link with OfficeServ through SIP Peering.
- Operation: Incoming local calls from FXO of a remote ITP is routed to OfficeServ through SIP, and incoming calls from SIP of a remote ITP is also routed to PSTN through FXO.

2) Outgoing call to SIP-FXO

- If Remote ITP makes an emergency call (ex, 911), that call is routed to Emergency Center of Remote ITP through SIP FXO.
- It is possible to route the outgoing call to SIP-FXO only when SIP-FXO and Remote ITP are in the same area.
- Outgoing call of Remote ITP is routed to SIP-FXO through SIP Peering and FXO can receive that call.

3) Incoming call from SIP-FXO

- If an incoming call is received from SIP-FXO, that call is routed to Remote ITP
- It is possible to route the incoming call (from SIP-FXO) to Remote ITP only when SIP-FXO is distinguished from the Called Party Number.

4) Setup

- In **MENU 2.7.1 ITP Information**, input Emergency Code and Emergency Dial.
  - Emergency Code: SIP FXO Identification Code for each Remote ITP
  - Emergency Dial: Emergency Number
- In **MENU 3.1.2 Routing Digits**, input emergency dial of MENU 2.7.1 to LCR Digit,
- In **MENU 3.1.4 Routing Table,** input SIP Trunk Group number for LCR Routing.
- In **MENU 5.2.17 SIP Peering,** input IP address of SIP-FXO.
- In **MENU 3.2.3 DID Ringing**, input SIP-FXO Identification Code to incoming digits and Remote ITP number to destination.
- Select **MENU 5.2.3 VoIP Outgoing Digits.**
  - Access Digit: Input emergency code of MENU 2.7.1 to Access Digit and length of emergency code to Digit Length.
  - IP Table Number: Input table of MENU 5.2.17.
  - Del Length: Input length of emergency code. This option is for deleting emergency code which is inserted into the outgoing call of SIP-FXO.
- Select **MENU 5.2.4 VoIP Incoming Digits**.
  - Access Digit: Input emergency code of MENU 2.7.1.
  - Digit Length: Input length of emergency code.

- If an emergency outgoing call is failed, reassign class to follow the next LCR Table.

5) Call Flow of outgoing call to SIP-FXO

- This flow is only for the case that Remote ITP makes an outgoing call through LCR.
- If the LCR digits is same with a emergency dial in MENU 2.7.1 ITP Information, the emergency code in MENU 2.7.1 ITP Information is inserted during processing LCR digits
- The call is routed to SIP trunk through inserted LCR digit
- The call is routed to SIP FXO through inserted identification code when the call is outgoing to SIP trunk.

5) Call Flow of incoming call from SIP-FXO

- As an incoming call receives from SIP FXO, a SIP FXO identification code is inserted by in-table of MENU 5.2.4 VoIP Incoming Digits.
- The call will be divided by SIP FXO identification code in MENU 3.2.3 DID Ringing and routed to remote ITP.

2.4.4 SIP Peering Feature

1) SIP Peering

- It sends OPTIONS message, which checks the state of SIP Peering, to serve Re-routing feature for SIP Peering.
  - Set Ports of each SIP Peering.
  - Set protocol type (UDP/TCP) of each SIP Peering/SIP Trunking.

2) Setup

- Select **MENU 5.2.17 SIP Peering**.
  - Protocol: Choose the protocol of IP Address. (SIP/H.323)
  - Alive Check: Choose if it needs Link Test or not. If it needs, set to <Option>. (None/Option)
  - User Information: Input user name to be loaded in To&From header of OPTIONS message. It should be Alphanumeric. System can Not send OPTIONS message without this information.
  - Remote Port: Input the port for using SIP server.
  - Check Timer: Input the time interval of Link Test. It will operate while Alive Check is set to <Option>.
  - SIP Signal Type: Choose Transport Type for sending SIP message. (UDP/TCP))

- Select **MENU 5.2.12 SIP Stack/Ext/Trunk Options**.
  - CLIR Flag with Number: Set this option to Enable when called party wants not to display the CLI number in case of SIP outgoing call.
  - Incoming Mode: Choose the display option for an incoming call through VoIP trunk.

- Follow TRK Ring – Follows the table in MENU 3.2.1 Trunk Ringing.
- Follow DID Trans – Follows the table in MENU 3.2.3 DID Ringing.
- Follow Incom Digit – Displays the incoming Called Party Number.

◆ Peer CLI Table: Set the CLIP table number for referring as making a SIP Peering call. User can choose among the table 1~4 in MENU 2.4.3 Send CLI Number. But in case of SIP Trunking, it refers Send CLIP Table in MENU 5.2.13 SIP Carrier Options.

- Select **MENU 5.2.13 SIP Carrier Options**.
  - ◆ Hold Reinvite: Choose if system should send RE-INVITE message as doing HOLD and RESUME, or not. If this option is enabled, system will send RE-INVITE message to inform that the call is changed to HOLD state as user press HOLD button during SIP Session operation.
  - ◆ URI Type: Choose the SIP URI type for SIP messages. It serves SIP-URI and TEL-URI by the SIP standard. (SIP/Tel)
  - ◆ SIP Signal Type: Choose the transport type for SIP messages. (UDP/TCP)

2.4.5 Others

1) Bath Alarm

- In **MENU 5.13.1 Tenant Options,** set the destination of Bath Alarm.
- If visitor dials the BALARM ID in hotel room, it will make a bath alarm call to the destination phone. BALARM dialing is operated with only one touch.
- Italy only can enable.

2) Speaker mode Call Paging

- User can use Station Page in Speaker mode.
- In **MENU 4.7.2 COS Contents,** set SPK PAGE to Yes.

3) Station MMC Password

- User can set to prevent to enter the Key MMC 102~199 with password.
- **In MENU 4.7.2 COS Contents**, set MMC PSWD to Yes.

4) Macro Key

- User can set feature code in speed dial with MACR key.
- User should input the speed dial number (00~49) to extension of MACR key, and set the dialing number in **MENU 5.15.7 Station Speed Dial**.
- As sending the speed dial number, all digits will be sent at one time in normal case. But if MACR key has been set, system will analyze the each digit.
- In **MENU 4.9.2 Station Key**, set MACR key and extension number.
- In **MENU 2.8.0 Numbering Plan,** set feature ID of MACR.

5) All Group Pickup

- User can pick up the call of individual station by dialing feature ID of MYGRPK. In this case the individual station should be a member of Pickup Group.
- If All Ringing Pickup option is set to On in **MENU 5.14.1 Transfer/Recall/Pickup Options,** user can pick up any call by dialing feature ID of MYGRPK even if the phone is not a member of Pickup Group.

6) CID Display Option

- Some selectable options for displaying CID during ringing a phone are added.
- User can choose an option for displaying CID during a conversation.
- In **MENU 5.15.3 Station Display**, set CID Display options.
  : No display, Number First, Name First, Number+DID, Name+DID
- In **MENU 5.15.3 Station Display,** set CONV Display options.
  : CLI Number First, CLI Name First, DID Number First, DID Name First, DID/CLI Number

7) Trunk MOH

- Analog Trunk can be used in External MOH port.
- In **MENU 2.6.5 Loop Trunk Data,** set Use MOH to Yes.

8) SPNet Transfer Auto Answer

- If a trunk call is transferred to SPNet and the call is answered automatically, it will operate in the same way with the normal system.
- In this state, if a station transferring the call hangs on, it will operate as follows:
  - The held trunk hears Ringback tone.
  - The auto-answered phone gives a ring.

9) MGI Local RTP Port

- User can change MGI RTP Port to other values. (It was fixed with 30000.)
- In **MENU 2.2.2 MGI Card,** input a value to Local RTP Port.

10) Analog CID for UK

- UK can also receive CID through Analog Trunk.
- Trunk line has to be connected to authorize CO line.
- In **MENU 2.6.5 Loop Trunk Data,** set CLI Trunk to Yes.

11) OS7100 Cabinet with OS7200

- OfficeServ 7200 can connect OfficeServ 7100 Cabinet for expansion rack.
- LCP card, not MP1x card, has to be installed in OfficeServ 7100 cabinet.
- In **MENU 2.1.5 System Options,** set Cabinet Type to OfficeServ 7100.

12) ISDN Message Options

- The message flows of Supplementary Service for PRI or BRI module(or cards) are different. It depends on systems or versions. So user should set the option.
- In **MENU 2.1.5 System Options,** set BRI or PRI ISDN SS Service option.
- User can choose to release the call at once with Progress Indicator or to keep the B channel when the opposite hang on during a call through ISDN trunk.
- In **MENU 2.1.5 System Options, if I**SDN Progress Indicator Call Clear is Enabled, it will keep the B channel until receiving the release message. But if the phone hangs on, the call will be cleared.

13) ISDN Dial Sending

- When making an outgoing call via ISDN trunk, the DIGIT sent through D-channel before the call is connected.
- But some applications wait the dial message from B channel.
  (For example, when user inputs some additional digits after answering of IVR)
- **In MENU 5.14.5 ISDN/RT/Trunk Options,** if <ISDN Outgoing Connect when Progress> is set to On, the digits will be sent through B-channel. In this case, it is considered as call connection and reported as call duration in SMDR.
- **In V4.30 S/W,** even if the option is Off, the digit will be sent through B-channel.

14) The Others

- VoIP trunk CLI Transfer: When the incoming trunk call routes to SIP or H.323 trunk, the received CLI will be sent through the trunk.

- WiFi phone protocol: SMT-W5100 phone supports both SIP mode and OfficeServ mode.

- Samsung SIP phone: V4,30 S/W supports the SMT-i2100 phone, economic SIP Phone.

- SoftPhone Multi-Server: OfficeServ SoftPhone supports multi-server.

- Syria Project:
  In **MENU 2.1.5 System Options** in Korea mode, if SYRIA R2/RD Select is enabled, system can connect to PSTN of Syria with R2.
  And then the normal phone, not Large LCD phone, can make a Group Conference.

- SIP Connect: OfficeServ System interworks the BroadWorks SoftSwitch with Samsung Networks specifications.

- OS7200 NMS support: The MP20 supports OfficeServ NMS.